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REMARKS

Claims 1, 2, 4-20, and 23-26 are pending in the above-identified application.

Section 112

Applicant respectfully requests reconsideration of the rejection of claims 25 and 26 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement, and second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As shown in Figs. 2, 4, and 5, a region R of the second pattern does not overlie the first pattern, but instead pattern elements of the second pattern overlie the windows of the first pattern in the region R to ensure no dislocations reach the surface of the crystal substrate. (See page 11, lines 2-5, page 13, lines 13-21, page 14, lines 1-2, and page 15, lines 15-19). Accordingly, each pattern element of a pattern need not both partly overlie and partly not overlie a pattern element of another pattern. Rather, a pattern may have pattern elements that only overlie a pattern element of another pattern, may have pattern elements that both partly do and partly do not overlie a pattern element of another pattern, and/or may have pattern elements that do not overlie a pattern element of another pattern. For example, as shown in Fig. 4 the pattern element at the right end of the second mask pattern 15A does not overlie a pattern element of the first mask pattern 13. Accordingly, Applicant submits the recitation "at least one pattern element of said second plurality of patterns does not overlie a pattern element of said first plurality of patterns in the direction of the thickness of the crystal" of claim 25 and similar recitations of claim 26 are described in the specification in such a way as to satisfy the written description and definiteness requirements of Section 112.

In view of the above, the Section 112 rejections of claims 25 and 26 are improper and should be withdrawn.

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Section 103 - Pribat

Applicant respectfully requests reconsideration of the rejection of claims 1, 2, 4, 7, 11-20 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,952,526 (Pribat).

Claims 1, 2, 4, 7, and 11-20 recite a method of manufacturing a crystal of a III-V compound of a nitride system, the method comprising, among other things, forming a first plurality of patterns of at least one pitch, in one position in a direction of a thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein the second plurality of patterns at least partly overlies the first plurality of patterns in the direction of the thickness of the crystal and at least partly does not overlie the first plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

As stated on page 5 of the Office Action, Pribat does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Applicant respectfully disagrees with the Examiner that it would have been obvious to modify Pribat to obtain the claimed invention. The Examiner has not shown suggestion or motivation in Pribat or in the knowledge generally available to one of ordinary skill in the art to modify Pribat to obtain the claimed invention, and therefore has not met his burden of proving a *prima facie* case of obviousness.

On page 9 of the Office Action, the Examiner states, "Pribat teaches various size [sic] of apertures and bands and that the size of the apertures affects the thickness of the monocrystalline layer...Therefore, because the width of each gap 43,44,45 can be optimized to produce a uniformly thick monocrystalline silicon layer; the pitch will be different because the pitch is dependent on the width of a stripe and the width of the interval of a stripe..." Pribat teaches apertures between 1 and 20

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micrometers and that the apertures can be too wide to obtain monocrystalline silicon layers of uniform thickness. However, Pribat does not teach or suggest optimizing the width of each aperture to produce two separate patterns having different pitches from one another. Rather, Pribat merely teaches a range of exemplary widths and suggests limiting the width of each of the apertures to grow layers of a uniform thickness. Furthermore, even if the apertures of two separate patterns are different, depending upon the lengths of the dielectrics the pitches of the separate patterns are not necessarily different. For example, in Fig. 19 Pribat appears to illustrate separate patterns having different aperture widths than one another. However, because the lengths of the dielectrics are different, the pitches are generally the same (each measured at about 2.5 inches). The Examiner has also asserted the difference in pitch is merely a change in the size of the gaps and stripes, and changes in size and shape are held to be obvious. Although changes in size and/or shape have been held obvious when the change was not significant and/or did not result in a change in performance, changes in size and/or shape are not obvious per se. In the instant application the change in size, as compared to Pribat, produces differing pitches to facilitate ensuring no dislocations reach the surface of a crystal substrate, and therefore is not obvious. Accordingly, the Section 103 rejection of claims 1, 2, 4, 7, and 11-20 is improper and should be withdrawn.

Claims 23 and 24 recite a method of manufacturing a device by forming a device film on a surface of one of a crystal substrate and a crystal film, the method comprising, among other things, forming a first plurality of patterns of at least one pitch in one position in a direction of the thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein the first plurality of patterns at least partly overlies the second plurality of patterns in the direction of the thickness of the crystal and at least partly does not overlie the second plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

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As discussed above, Pribat does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Accordingly, the Section 103 rejection of claims 23 and 24 is improper and should be withdrawn.

Section 103 - Tsuda

Applicant respectfully requests reconsideration of the rejection of claims 1, 2, 4, 7, 11-15 and 23-26 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,294,440 (Tsuda).

Claims 1, 2, 4, 7, and 11-15 recite a method of manufacturing a crystal of a III-V compound of a nitride system, the method comprising, among other things, forming a first plurality of patterns of at least one pitch, in one position in a direction of a thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein the second plurality of patterns at least partly overlies the first plurality of patterns in the direction of the thickness of the crystal and at least partly does not overlie the first plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

As stated on page 6 of the Office Action, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Applicant respectfully disagrees with the Examiner that it would have been obvious to modify Tsuda to obtain the claimed invention. The Examiner has not shown suggestion or motivation in Tsuda or in the knowledge generally available to one of ordinary skill in the art to modify Tsuda to obtain the claimed invention, and therefore has not met his burden of proving a *prima*

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facie case of obviousness. Accordingly, the Section 103 rejection of claims 1, 2, 4, 7, and 11-15 is improper and should be withdrawn.

Claims 23 and 24 recite a method of manufacturing a device by forming a device film on a surface of one of a crystal substrate and a crystal film, the method comprising, among other things, forming a first plurality of patterns of at least one pitch in one position in a direction of the thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein the first plurality of patterns at least partly overlies the second plurality of patterns in the direction of the thickness of the crystal and at least partly does not overlie the second plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

As discussed above, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Accordingly, the Section 103 rejection of claims 23 and 24 is improper and should be withdrawn.

Claim 25 recites a method of manufacturing a crystal of a III-V compound of a nitride system, the method comprising, among other things, forming a first plurality of patterns of at least one pitch, in one position in a direction of a thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein each of the first and the second plurality of patterns take form in pattern elements and at least one pattern element of the second plurality of patterns overlies a pattern element of the first plurality of patterns in the direction of the thickness of the crystal and at least one pattern element of the second plurality of patterns does not overlie a pattern element of the first plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one

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pitch of pattern elements of the second plurality of patterns are different from each other.

As discussed above, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Additionally, as stated on page 7 of the Office Action, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein each of the first and the second plurality of patterns take form in pattern elements and at least one pattern element of the second plurality of patterns does not overlie a pattern element of the first plurality of patterns in the direction of the thickness of the crystal. Applicant respectfully disagrees with the Examiner that it would have been obvious to modify Tsuda to obtain the claimed invention. The Examiner has not shown suggestion or motivation in Tsuda or in the knowledge generally available to one of ordinary skill in the art to modify Tsuda to obtain the claimed invention, and therefore has not met his burden of proving a *prima facie* case of obviousness. Accordingly, the Section 103 rejection of claim 25 is improper and should be withdrawn.

Claim 26 recites a method of manufacturing a device by forming a device film on a surface of one of a crystal substrate and a crystal film, the method comprising, among other things, forming a first plurality of patterns of at least one pitch in one position in a direction of the thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein each of the first and the second plurality of patterns take form in pattern elements and at least one pattern element of the first plurality of patterns overlies a pattern element of the second plurality of patterns in the direction of the thickness of the crystal and at least one pattern element of the first plurality of patterns does not overlie a pattern element of the second plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of

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patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

As discussed above, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. As also discussed above, Tsuda does not disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein each of the first and the second plurality of patterns take form in pattern elements and at least one pattern element of the second plurality of patterns does not overlie a pattern element of the first plurality of patterns in the direction of the thickness of the crystal. Accordingly, the Section 103 rejection of claim 26 is improper and should be withdrawn.

Section 103 - Pribat or Tsuda in View of Fleming

Applicant respectfully requests reconsideration of the rejection of claims 1, 4-6 and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Pribat or Tsuda in view of U.S. Patent No. 6,358,854 (Fleming).

Claims 1, 4-6, and 8-10 recite a method of manufacturing a crystal of a III-V compound of a nitride system, the method comprising, among other things, forming a first plurality of patterns of at least one pitch, in one position in a direction of a thickness of the crystal, and forming a second plurality of patterns of at least one pitch, in another position in the direction of the thickness of the crystal, wherein the second plurality of patterns at least partly overlies the first plurality of patterns in the direction of the thickness of the crystal and at least partly does not overlie the first plurality of patterns in the direction of the thickness of the crystal, and wherein the at least one pitch of pattern elements of the first plurality of patterns and the at least one pitch of pattern elements of the second plurality of patterns are different from each other.

As discussed above, neither Pribat nor Tsuda disclose or suggest forming a first plurality of patterns of at least one pitch and forming a second plurality of patterns of at least one pitch, wherein the pitch of pattern elements of the first plurality of

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patterns and the pitch of pattern elements of the second plurality of patterns are different from each other. Additionally, Fleming does not make up for the deficiencies in Pribat or Tsuda. Rather, Fleming discloses a structured layer need not be rectangular bars arranged parallel to each other, but can take on different shapes, sizes and orientations. At page 10 of the Office Action, the Examiner asserts that the different shapes, sizes and orientations "will inherently change the pitch of a layer because the pitch is dependent on the width of stripe and width of the interval between strips" and therefore "Fleming does suggest changing the pitch of a patterns [sic]." Although Fleming does indeed teach a variety of different shapes, sizes and orientations for the structured layer, Applicant maintains Fleming does not disclose or suggest two separate patterns having different pitches from one another. Accordingly, the Section 103 rejection of claims 1, 4-6, and 8-10 is improper and should be withdrawn.

CONCLUSION

If the Examiner believes that there is any issue which could be resolved by a telephone or personal interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

As the application is believed to be in condition for allowance, a favorable action and Notice of Allowance are respectfully requested.

Dated: June 16, 2004

Respectfully submitted,



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